



Bat Attack! Flying Paper Bats with micro:bit and Motor

Make this spooky decoration to fill your house with flying bats at your next Halloween party.

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INTRODUCTION

Make this spooky decoration to fill your house with flying bats at your next Halloween party. You'll need a Bit Board, micro:bit, a servo, and some LEGO.



TOOLS:

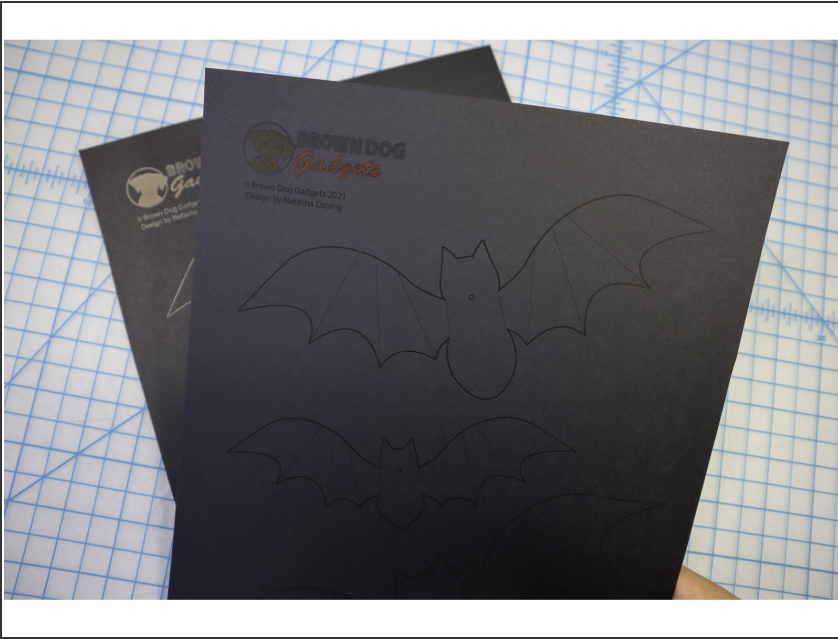
- [Scissors](#) (1)
- [Masking Tape](#) (1)
- [Maker Tape](#) (1)
- [Fishing line](#) (1)
- [Black Paper](#) (1)
- [Bone Folder](#) (1)



PARTS:

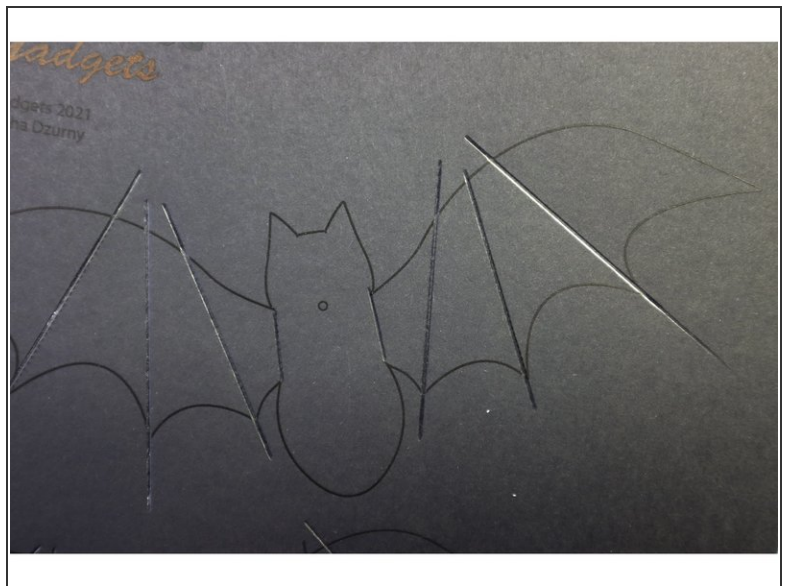
- [micro:bit](#) (1)
- [Crazy Circuits Bit Board](#) (1)
- [Brick Compatible 270 Degree Servo](#) (1)
- [LEGO Baseplate](#) (1)
- [LEGO Plate 1 x 6 \(3666\)](#) (4)

Step 1 — Print the Template



- Print the template on black paper if you can, or print and color the bats black.
- I printed two sheets to make 6 bats, but your project may require more or less depending on the space you have to hang it.

Step 2 — Prepare the Fold Lines



- Use a bone folder or a pen to mark the fold lines as shown.

Step 3 — Cut out the Bats



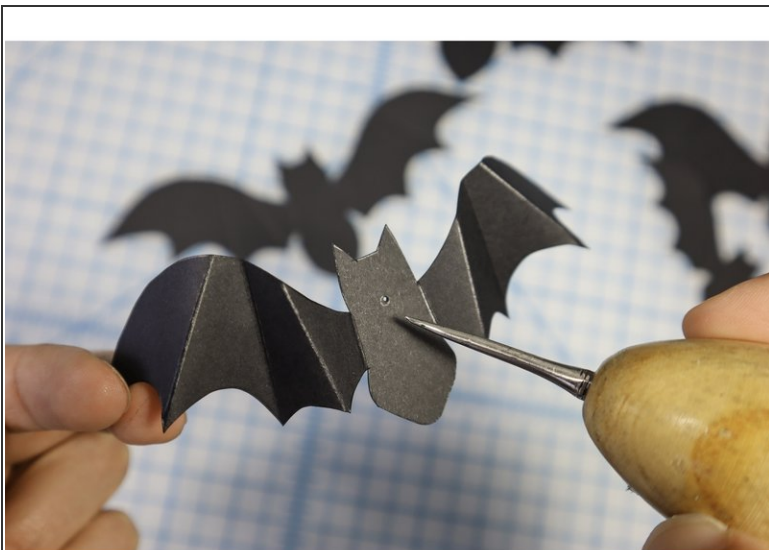
- Cut out the bat shapes.

Step 4 — Fold the Bat Wings



- Fold the bat wings back and forth on every other crease like you would a paper fan.
- Repeat for all the bats.

Step 5 — Make a Hole



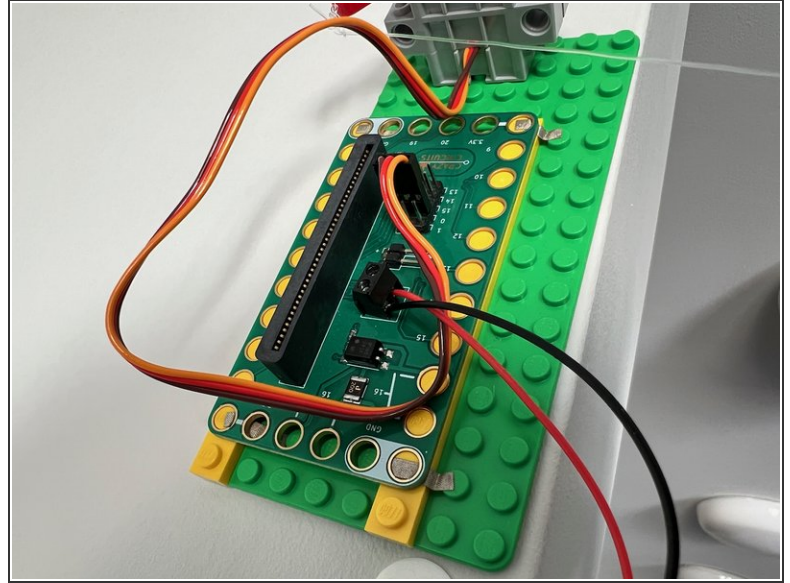
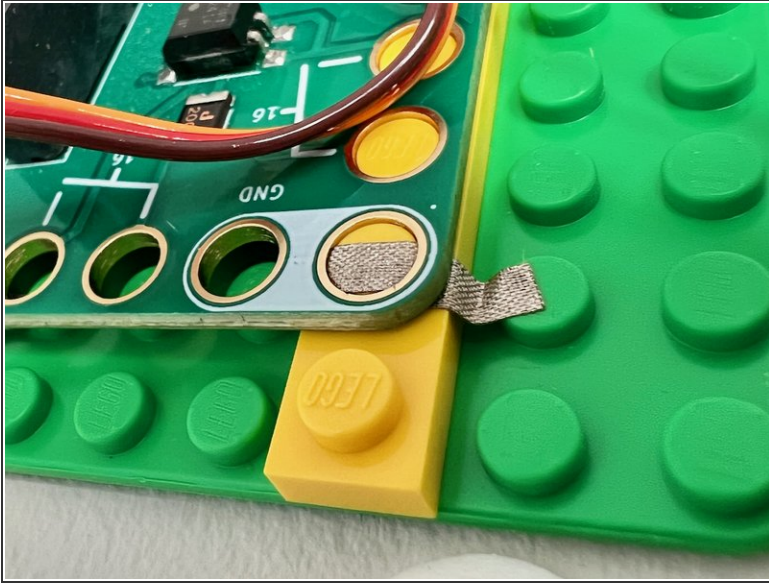
- Make a hole in each bat where indicated.

Step 6 — Add Fishing Line to the Bats



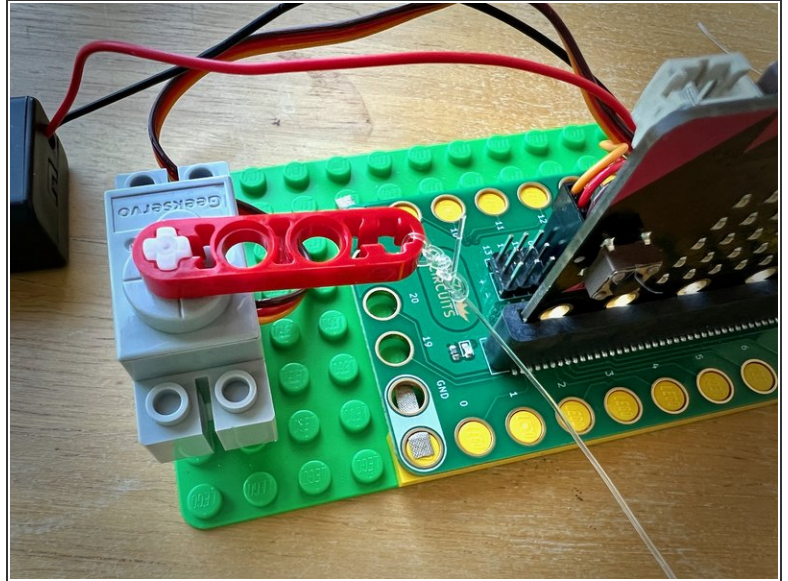
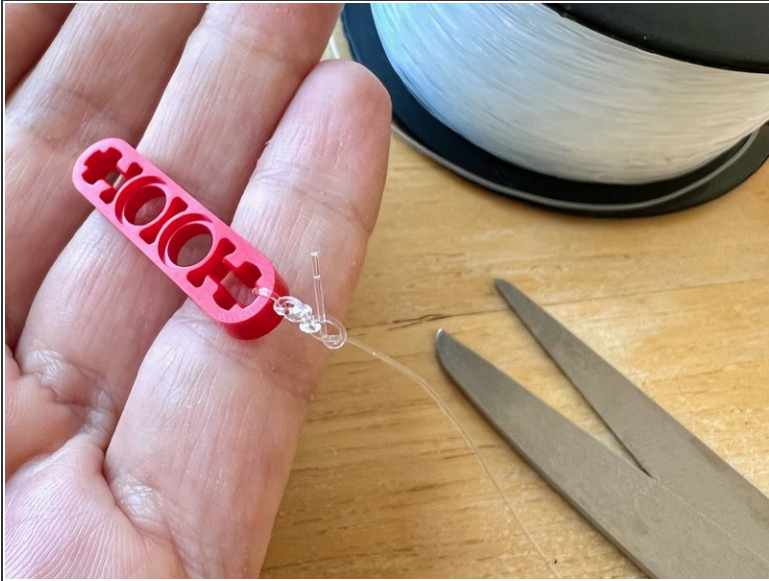
- Thread about 2 feet of fishing line through the hole on each bat and tie a knot to keep it in place.

Step 7 — Build the Circuit



- Place a small piece of Maker Tape on the bricks under the corners of the Bit Board to make it fit snugly on the pegs. If you don't have Maker Tape, you could also use a strip of masking tape.
- Connect the battery pack to the battery terminal, the servo motor to pin 0, and place the micro:bit into the edge connector.

Step 8 — Connect the Motor Head



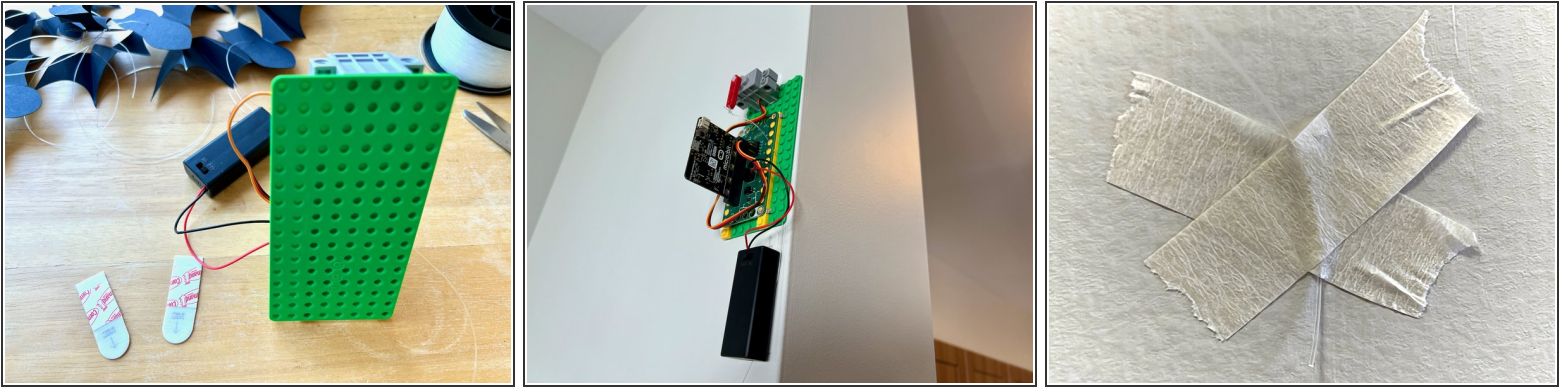
- Cut a piece of the fishing line long enough to reach across your room, adding about 6 inches extra.
- Tie the end to the motor head.
- Place the motor head with the fishing line on top of the motor.

Step 9 — Add the Code



- Upload the code to micro:bit :
https://makecode.microbit.org/_X8LWao0mb...

Step 10 — Attach the project to the wall



- Use command strips to adhere the baseplate and the battery pack to the wall (so you don't make any permanent marks on the wall).
- Tape the other end of the fishing line to the wall on the other side of the room. There should be about 3 inches of slack left in the line to allow the motor to move.

Step 11 — Tie the Bat Strings



- Tie the bat strings to the main string letting the bats hang at different lengths. Tie the smaller bats higher and the larger bats lower to give the appearance of depth.
- Trim any excess fishing line from the project.

Step 12 — Turn on the battery pack!



- Turn on the battery pack and watch the bats fly!
- HAVE A HAPPY HALLOWEEN!